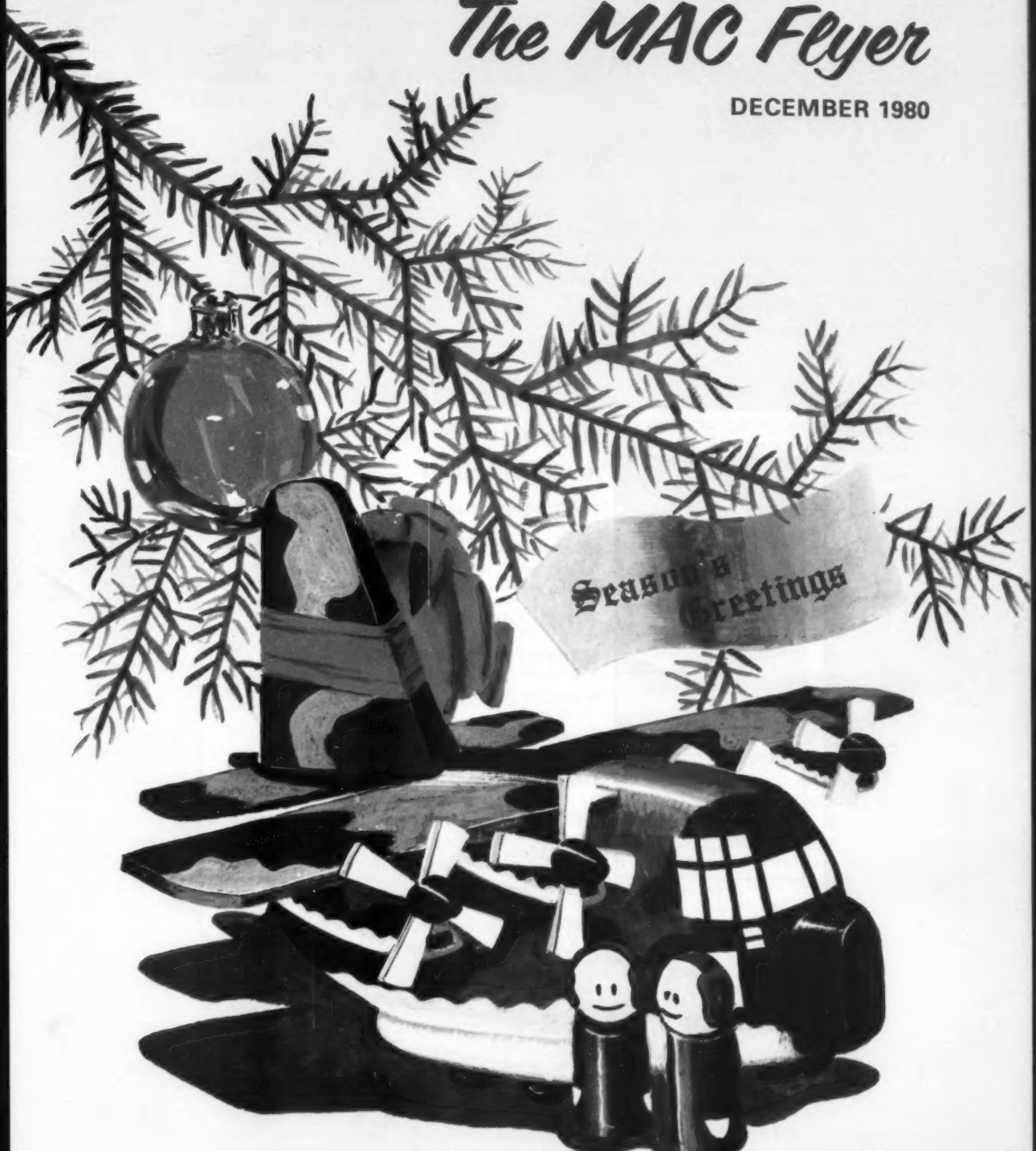
The MAC Flyer

DECEMBER 1980



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The MAC Flyer

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For Greater Safety and Efficiency in MAC Air Operations.

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CINCMAC's Holiday Message

The year 1980 is just about to become history, and once again Military Airlift Command has proven itself to be a keystone in our nation's defense structure. We have opened the new decade of the 80s by demonstrating that in every aspect of accomplishing MAC's demanding variety of flying missions, professional dedication to the security and safety of our airlift resources—including both equipment and people—is the watchword. Continuation of the exemplary flying safety record which helped the command win the coveted Secretary of the Air Force Safety Award for 1979 attested to the commitment of every person associated with the flying mission, whether they were aircrew members or members of one of the many support teams which help to "keep 'em flying."

It takes unselfish dedication and tireless effort on the part of each and every one of us to meet the demands of our national defense requirements, in addition to providing the assistance our allies around the world have come to expect during threats to their security and natural disasters such as floods, famines and earthquakes. I am sincerely proud of the way you have responded in every instance this year. You have not only continued MAC's tradition of unequalled responsiveness, regardless of the challenge or its location in the world, you have added new dimensions to the command's proud heritage. In addition to carrying out the "routine" business of global strategic and tactical airlift, rescue and recovery, weather support, audiovisual documentation, aeromedical evacuation and administrative airlift, your participation in increasingly realistic and demanding "war games" has shown that you are ready to take new challenges in stride while continuing to handle the more familiar ones.

To keep up with your "can do" spirit, we are continually striving to upgrade the hardware with which you are expected to do your job, and the quality of life for you and your families as members of the Air Force/MAC team. In both areas we made significant progress during 1980. Upgrade of our airlift fleet is progressing markedly through such programs as the C-141 stretch and refueling modifications, and the C-5 wing modification. Other improvements in hardware are in various stages of development, but are coming along. On the personnel side of the picture, our efforts to gain compensation and benefits which more closely match the extremely selfless commitment you have made to serve your country are beginning to bear fruit at last. And, you may be assured that I will continue to press for an increasingly rewarding and desirable standard of living.

With all these things in mind, I have high expectations of even greater accomplishments as the decade of the 80s continues to unfold. Mrs. Huyser and I extend our sincerest best wishes to each of you and your families in the Military Airlift Command. May you have a happy, secure and safe Holiday Season and continue to enjoy God's blessings throughout the New Year.

How Do I Write Thee?

Let Me Count the Ways

Model: Carol A. Manfucci Photo by TSgt George W. Rosekrans

Just about anybody who's been flying for awhile has experienced, either personally or vicariously, a "war story" type event which is worth passing on to the rest of us who fly for a living. For the person without much writing experience, quite often the biggest stumbling block is deciding how to tell their story in the most interesting and effective way. Here are a few tips from the *TMF* staff.

1. The most straightforward approach is to simply tell it like it happened in chronological time sequence—more or less the same way you'd tell it at the bar or at a party, including whatever colorful embellishments you want to include, but normally leaving out identifying names of individuals or units where it might be embarrassing.

2. Another technique is to take the basic event and use it as the nucleus for a fictional account. With this method you can manipulate the story line to build suspense, increase drama and impact, invent characters and exercise considerable imagination in that realm known as creative writing.

3. Poetry is another medium for getting your message across which taxes your imagination and permits plenty of creative juices to flow. Just make sure you follow some sort of recognizable rhyme scheme. It's often helpful to reread some of the great poets' works, or look over the words to some of the modern songs to get ideas for interesting, catchy rhyme schemes and patterns. You may even be inspired to do a parody of a well known song or poem, using your war story as the theme or subject.

There are innumerable tips we could pass on, just as there are a lot of good books in the library on how to write, but the above suggestions should be sufficient to get you started. Keep in mind that it is best to stick to subjects you are familiar with as a basis for your story or poem, even if you are fictionalizing, if you want your material to be believable. Above all, don't preach. If the moral in your story has to be hammered home heavy-handedly at the end, you're going to turn off an awful lot of readers. The most effective morals and lessons are self evident.

By now, you may be wondering why we're telling you how to become a Pulitzer Prize-winning safety story writer. Simple—it's time for *TMF's* annual Fly Safe Writing Contest. For all the rules and deadline info, see page 30 of this issue.

Your job affects loved ones, especially if you're . . .

Late for Christmas

by Capt James P. Coe
Associate Editor

Now quit worrying!" Linda scolded herself aloud. "Mike's been late getting home hundreds of times." But the nagging feeling of worry hung heavily upon her. Even though Linda's husband, Chief Master Sergeant Michael O'Connley, had flown the line as an engineer for 28 years, she still worried when he was unaccountably overdue. She had dreamed of Mike's retirement for a long time—and his 30 years were nearly finished.

Linda's reverie was broken by her youngest child, 17-year-old Anne. "Hey, Mom, when's dinner going to be ready? Think Dad'll be home tonight?"

"Be ready soon. Please set the table—just for the two of us, since your father's late." She tried to make it an offhand remark.

Anne busied herself with the silverware and dishes. Linda slipped back into her memories. Mike had been proud to be a crewmember from the first day he'd flown in the C-97. He'd never turned down a mission in all those years and this time was no exception.

"You're a chief. You don't have to go on a Dhahran double-shuttle just before the holidays," she had protested. But Mike put her off with an explanation of his responsibilities to the younger men—he was a professional.

"Oh well, after Mike retires he'll always be home for the holidays," Linda speculated aloud with a sigh.

Anne caught her mother's look of concern as she entered the kitchen. "Something wrong, Mom?"

"I don't think so, dear. Let's eat."

The two women ate quietly and watched a Christmas special on television. But Linda couldn't keep her mind on the Yuletide songs and merrymaking; her thoughts centered on Mike. He hasn't missed too many Christmases, she mused, and started to count. There was the first time in 1952 when he was in tech school and couldn't get a hop home. They were married the next spring. Then there was the year he worked on fighters in Korea—her first holi-

day alone. After that, he started flying and missed three Christmases, four wedding anniversaries, and the birth of the first two kids—all in seven years. And then there were the two tours in SEA.

Linda pushed back from the table, her dinner half finished. She settled into her favorite chair and picked up her needlepoint. Anne offered to make a pot of coffee. As she went to the kitchen, she nudged a switch on the wall and the Christmas tree lights came alive. Linda smiled.

But again, her thoughts quickly turned to a possible uncertain future. What would I do to get along if Mike weren't around, Linda fretted. I haven't used my teaching certificate since Anne was ten—who'd want a 45-year-old fourth grade teacher anyway?

A change in the television's sound level caught her attention. An announcer's tense voice interrupted: "This is a special Eyewitness News Bulletin. A giant Air Force cargo plane has been declared missing and is feared lost over the North Atlantic tonight. An Air Force spokesman says that an extensive communications search initiated an hour ago has thus far turned up nothing. The transport was last in radio contact with the flight facility at Loring AFB, Maine, at 5:30 p.m., Eastern Standard Time, and is now three hours overdue. For more details, watch Eyewitness—"

"Anneee!!"

Linda's daughter ran back into the living room, "Yeah, Mom, what's wrong?"

"Anne, there's a plane missing, and it might be your Dad's," Linda gasped and broke into tears.

Anne tried to be strong, "Come on, Mom, it probably isn't Dad's plane. He's always made it home before."

"I know, but I've got a feeling that your father is in trouble or hurt—he's so close to retirement. It's not fair!" Tears fell on her incomplete needlepoint of the MAC patch.

The tense atmosphere was suddenly interrupted by the crunch of snow on the front porch. Linda expected the doorbell to ring, to answer it, to see the blue Air Force sedan and to greet Mike's squadron commander and Chaplain Devine. Anne prayed for her father's footsteps.

As the key clicked in the lock, both women rushed to the door and pulled it open. Mike was practically yanked into the house still grasping his door key. Both women hugged him, half smothering him in their twin embrace. Linda secretly dried her tears on the sleeve of his flight jacket.

"Merry Christmas, ladies. I get the impression you're glad to see me," the chief finally managed to get out as the crush of his wife and daughter slacked off.

"Merry Christmas, honey. I was worried about you," Linda explained. "The TV says that there's a transport lost over the North Atlantic. I was sure it was your flight. How come you're late?"

"Oh, we did have a little trouble," Mike explained as he took off his jacket and handed Anne his B-4 bag. "About three hours out, the number two engine started running rough so the pilot decided to shut it down. Then the pressurization went out and we had to descend, and that slowed us down some more. We hit the coastline about an hour late and then the number one generator dropped off the line and wouldn't reset. I was starting to think we'd have to divert to Goose and spend Christmas in Canada. I'm glad we were able to bring it on home. It was nearly the last straw when we started down on the approach and found out that one of the left-main-gear bogies wouldn't lower. But I used a couple of tricks I learned from the Lockheed folks and finally got the wheels down and locked. To top it all off, we had to wait 20 minutes for the crew bus."

"At least you're home for Christmas," Linda smiled.

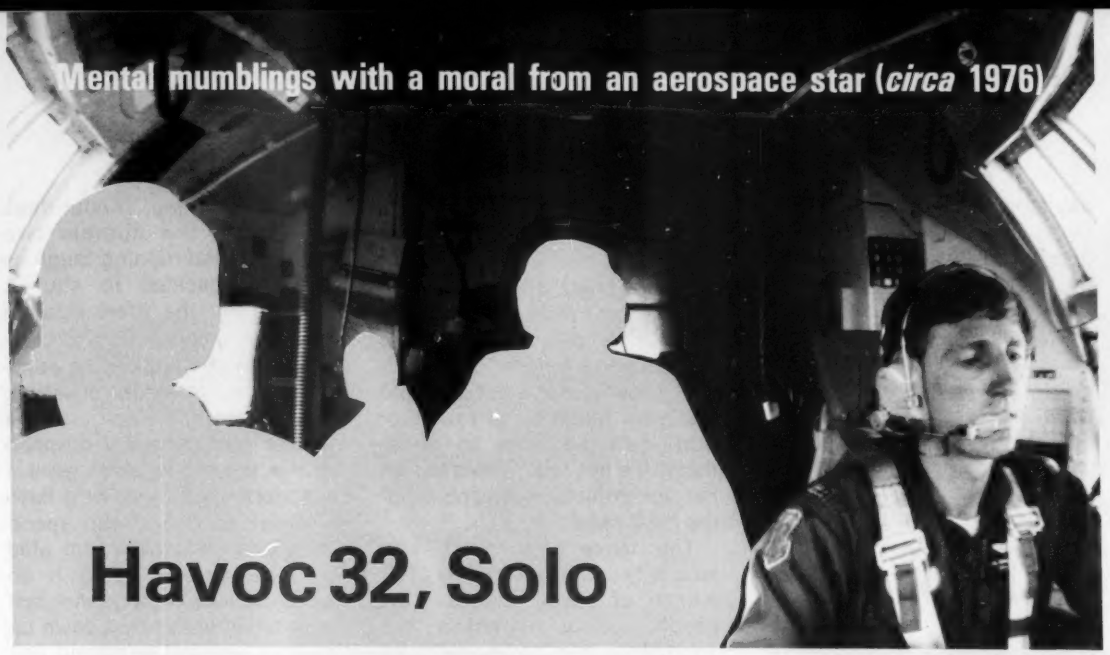
"Dad, telephone," Anne called from the den.

"Who is it?" Mike asked.

"It's the command post duty controller," Anne said, handing him the receiver.

"How's that?" asked Mike into the receiver. "The engineers are Sergeants Barnes and Patterson," he repeated as he started writing notes on the pad that had been kept next to the phone since he became the chief flight engineer. "They diverted into Sondy with their radios out, but they're okay . . . tell the colonel I'll be happy to call their wives. They'll be out for an extra day or two. Okay, thanks for calling—and Merry Christmas."

Mental mumblings with a moral from an aerospace star (*circa* 1976)



Havoc 32, Solo

by Capt Barry H. Smith
Department of History, USAF Academy, Colorado

O-dark-thirty show—Midnight Air Command strikes again. If God had wanted people to see the sun come up, He would have had it come up at nine. Actually the show times are no worse than under PACAF, and at least now the name fits.

Oh well, who can complain when the mission is such a milk run—up to Taegu, offload, and then back to Clark. That'll make a long day, but it should be easy. "George" will do most of the work—thank heaven for autopilots! Besides, this trip should add 10 or 12 hours to my flying time numbers. A nice chunk of time towards instructor pilot upgrade, and another successful mission for a young captain and new "Herky" AC.

Routine mission briefing—the words never seem to change. You just fill in the blanks with the day's takeoff time, destination, etc., then recite the standard crew duties and emergency procedures. I wonder, are any of the crew even paying attention? Why bother with this routine except to get the box lunch order straight?

Next we pick up the orders, the itinerary, and sign out. Maybe Donald Douglas was right, "When the weight of the paperwork equals the weight of the plane . . . ."

Bag drag out to the machine and then back to base ops. Check in with good ol' Command Post. Lord, keep me from such a fate! What do they do anyway? Provide more paperwork, that's what. At least in PACAF we did the paperwork on our own. Check the load—six pallets and no pax. This should be even easier than I thought—no pax briefs and no complaints about the noise or temperature in back. Weatherman says it's clear and a million all the way. The only problem will be trying to keep the sun out of my eyes while I read the glossy-pictured "tech orders."

A quick shot of grease from the snack bar and then back out to the brown-and-green aerospace vehicle. Sun's starting to peek over the horizon—only farmers and flyers are up at this hour. Pity those poor mortals who don't know the pleasures of flying and the beauty of sunrises.

Time to kick the tires. Check with the engineer, a quick walk-around, and into the cockpit. Peruse the 781—more paperwork. I think I'd refuse an aircraft if it were riding on a "black initial"—someone would probably be lying. All looks in order with only a few minor write-ups. The right-main and the left-auxiliary fuel gauges out. I hope they don't really expect me to take these kinds of things too seriously. I'll let the navigator know so he can start worrying about his fuel logs. Preflight complete, load on board—tight fit. Time to light the fires.

Taxi out, listening to the dull drone of the props. Me and General Savage of "Twelve O'Clock High" about to launch another mission as the whole world watches in awe.

Honorable Mention, 1980 MAC Flying Safety Writing Contest

Chalk up another on-time takeoff. Was anybody really watching? If they didn't notice the on-time departure, how will they ever know how good I am?

Gear up, eyes closed—the easy life of the loadmaster. Right turn on course, "tech order" climb. No autopilot until level off—a pilot has to fly a *little* to keep in practice.

We reach FL 210, level off and give it to George. Seat back a notch and feet up. Time to enjoy the ride of the elite.

Two-and-a-half hours out. We've finished with all the new jokes, the old jokes, the latest rumors, and a ham sandwich. Maybe the Taegu snack bar will have something hot. Fly MAC and see the world! A Korean snack bar, a Japanese snack bar, a Taiwanese snack bar—

"Pilot, engineer. Looks like we just lost the right-inboard fuel gauge. Both gauges are now inop on the right side."

Be cool. Show him that you know your systems, "Just make sure you pull the circuit breaker." Who can be concerned with another mere fuel gauge? It's not as though we were going to run out of gas. Maybe "Mother MAC" would expect a call to Pacific ALCC, or even a diversion into Kadena just ahead. Hardly a consideration for a true mission hacker.

Systems trivia discussed with the copilot and the merits of Osan evaluated with the crew—best shopping, best bars. It's been a long time since an RON at Osan. Schedulers get the RONs at Osan and mission hackers get the long-day out-and-backs to Taegu.

"Taegu Congrol, Havoc 32, flight level two one zero."

Time to move the seat back up and do the pilot's job. George is good, but the black boxes have a long way to go before they can replace a human pilot. This one can't land, and can't make decisions. Weather is VMC. Brief an enroute descent to a tacan approach, a 50-percent flap landing and then head for the BX concessions. There must be something new or different that I can buy. Copilot has the leg home and the "alpha charlie" can take a nap.

"Turn left heading 330, you are cleared for the tacan approach."

"Okay, copilot, gear down."

"Roger, gear down. Gear is down and . . . ."

Is that the best thing to do? Or is it the only thing left to do, since it's too late to try anything else?

Son of a gun. Nose gear is down and locked but both of the mains are indicating in transit. I've never seen anything like this before. "Load, pilot, how about getting a visual check on the gear?"

"Pilot, load, the gear is down but not locked. It looks like it has about another inch or two to go. The drag pins are not going into the shelf brackets."

"Let's continue the approach. Copilot, try reclying the gear."

Up and down. No change. "Okay, co, tell them we're going missed approach and we'd like to hold at the tacan at 10,000 to check out a possible gear malfunction."

Oh well, flying is more fun when it's challenging. We'll try the Lockheed approved solutions that work so well on checkrides. What approved solutions? The Dash One has several for gear that won't come down. But ours *is* down—almost. The book tells how to get it down, but it doesn't say how to lock it.

Level at 10,000 feet and give it back to George. "Okay, let's try the alternate extensions." At least one of them might solve the problem, and what else can we do? Circuit breaker is in and the hydraulic pressure is good.

"Copilot, keep Taegu advised of our intentions and status."

"Pilot, nav, if you'd like, I'll read the Dash One procedures over the interphone. That'll keep everyone straight and together, and leave everybody's hands free to carry out the procedures."

"Roger that. Sounds like a good idea." Sounds like something a good aircraft commander would have thought of.

"Crew, nav, this is 'Overriding the landing gear selector valve. If the landing gear . . . .'"

Strike one.

"Crew, nav, this is 'Manual gear extension. If hydraulic pressure is not . . . .'"

Strike two. If we can't force the pins in, then I doubt that trying to free fall the gear will be worth the effort. And chaining the gear down will be next to impossible without jettisoning at least part of our load.

"Copilot, I think it's time to declare an emergency."

"Taegu Approach, Havoc 32 declaring an emergency . . . five souls on board; 7,000 pounds of fuel . . . ."

"Co, tell them we'll try a Conference Skyhook. We're wasting our time with the standard gear solutions. Maybe we can talk to an old engineer from Stan-Eval

or FTD who's seen something like this before."

Seven-thousand pounds of gas, an hour and a half at best. Better look at the Dash One myself. The crew must be overlooking something or doing something wrong. There has to be something that I can figure out.

"Pilot, co, the Vice Wing Commander is on the line and wants us to check the circuit breaker and the hydraulic pressure."

Just my luck. I want an E-8 and I get an 0-6. I guess it's time to redo everything we've already done. I should have expected that, but right now we really don't have the time. Good planning, aircraft commander.

"Pilot, engineer, I'm going back to help out the loadmaster and see if I can figure it out."

Listen to Skyhook, listen to Taegu, listen to the nav, read the Dash One . . .

"Pilot, co, we're getting pretty far off the holding pattern."

. . . and fly the airplane! Better get back in the holding pattern. This is not the time for inattentive flying. I can see it now, headline: "Distracted Pilot Has Midair Collision." Better check everything else. Altitude is good — thanks to George— 5,500 pounds of gas. That is, 5,500 if the right tanks are holding what the left gauges say. This is not an opportune time for relying on parallel fuel readings. But how was I supposed to know? Oh, yeah. "Co, declare us at minimum fuel." Put all the tanks containing fuel on crossfeed. Not even my job. That should impress the engineer. Except he would have done it at 6,000 pounds like we're supposed to if he was up here. I guess I'm not really even impressing myself.

Manual extension again. Maybe this time with two men on the crank. Damn. Get back on the holding track. Glad this isn't a checkride! Or is it? No simulation in this emergency. Gear screwed up and low gas. Low gas? Missed it again—3,500 pounds! Good thing the rest of the crewmembers are performing their jobs properly. "Co, declare emergency fuel." Five-hundred pounds late.

Still no luck with the gear. Time to decide. I see another headline: "Pilot Flames Out While Trying to Lower Landing Gear." "Crew, pilot, we're going to start down and head toward the field. We'll keep working with the gear until we get on the tacan final approach. If we can't get it to lock by then, we'll have to raise it back up and land with only the nose gear down."

Is that the best decision? Is that really what I want to do? Or is it the only thing left since it is now too late to jettison any of the cargo and too late to try and chain the gear down. I can't blame the crew— they were all doing their jobs right. Time for the aircraft commander to bite the bullet.

"Pilot, engineer, I think we've got it whipped back here— after cranking the wheels up and down a dozen times."

"Pilot, co, the indicators are showing down and locked."

"Good job. Let's all get strapped in and get this beast on the ground." And get the aircraft commander—if he deserves the title—off the hook.

Normal landing—emergency terminated. The fuel gauges show 1,300 pounds. Not bad for a T-38, but not at all good for a C-130.

Another successful mission — for the crew.

A few hours later new aircraft commander flies the Herk gear-down to Yokota to RON for repairs. He's little less new and a lot wiser, and maybe even knows why those other four people are on board and why there's a command post on the ground. And maybe next time he'll even take along a change of clothes on an out and back, just in case.

ABOUT THE AUTHOR

Captain Barry H. Smith is a 1972 graduate of the Air Force Academy. He completed his master's degree in history at Indiana University after commissioning, and before going to Sheppard AFB, Texas, for pilot training. His first assignment after UPT was to the 776 TAS, Clark AB, Philippines. After tactical airlift units came under the control of MAC, Capt Smith served as a C-130 aircraft commander and instructor pilot with the 21 TAS, and later was an air operations officer with the 374 TAW, also at Clark. In 1978 he returned to the Academy, where he currently teaches history and instructs cadets in the T-41.

Dear Doc

Dear Doc,

I just called the Flight Surgeon's Office about my annual physical. The tech that made the appointment said that since I was now over 30, I'd need a couple of extra blood tests. Then she rattled off a bunch of instructions about not drinking booze for a week, or eating in the snack bar, and no food or drink the day before the physical.

Did you get a finicky vampire in the lab? What gives Doc?

Ben Leach, Capt, USAF
MAC Pilot

Dear Captain Leach,

Not to worry! You haven't been stuck with any needless tests. We in the flight medicine business need to check your blood cholesterol and triglyceride levels. Those blood tests, along with your overall physical condition and family history, can help us tell if you are more or less likely to have cardiovascular problems than the "average flyer."

First, we need to get the instructions right. What the medical technician said when you made your appointment was something like, "You must have nothing to eat or drink after 2200 hours the night before your physical. You may not eat greasy or fatty foods for 24 hours before the tests. And no alcohol shall be consumed for 72 hours before your examination." I know this may seem very difficult, Ben, but it's for your own good. Remember, "You've got to be tough to fly the heavies."

Since most of the recent information on the effects of cholesterol and triglycerides has been published in journals that MAC crewmembers don't normally read, I'd like to bring you up to date. Although opinions of prominent researchers vary, we believe that too much cholesterol and too many triglycerides in your blood system is a sign of possible health problems. Here's why.

We have two sources of cholesterol: certain foods we eat, and our body itself. The body normally manufactures all the cholesterol you need, so it follows that if you don't consume any cholesterol, then the body will usually maintain its own natural level of the substance.

Unfortunately, the American diet is high in cholesterol, because there is great emphasis on meat and other animal products in our foods. Our consumption of around 800 milligrams of cholesterol per day has made high blood-cholesterol levels epidemic among Americans. In other societies, like Japan, where far less cholesterol is consumed, the heart attack rate is dramatically lower than it is in the U.S. In populations where cholesterol consumption is very low, or is absent, heart disease is virtually unknown.

Studies show that blood-cholesterol levels vary in direct proportion to the amount of animal products eaten. A diet void of these foods and high in complex carbohydrates (fruits and vegetables) produces low cholesterol levels. The ideal cholesterol level in your blood is about 100 plus your age, up to a maximum of 160 milligrams per deciliter. Extra unused cholesterol is stored as plaque in the arteries.

In the U.S. we view meat as our main source of protein, to the exclusion of other important sources. Actually, plenty of protein is available from non-cholesterol building foods like grains, beans, potatoes, fruits and other vegetables. Additionally, they also supply important fiber,

more

less

fats, minerals and vitamins. I'm not trying to tell you that you must become a vegetarian. Rather, I want to emphasize that cholesterol consumption must be controlled, and lowered if the level of the chemical in your blood is too high. The excess cholesterol in your blood system is slowly silently and painlessly closing your arteries—you're killing yourself.

The other test we do is for triglycerides, a complex fat. Fats are oil-soluble liquids, similar to cooking oil. Fat molecules stick to each other in your blood system, instead of mixing well with the blood, which is a water-base liquid.

When blood is loaded up with these fats it becomes sludgy, and its flow slows down. Laboratory studies show that this cuts down on the blood's efficiency as a deliverer of nutrients and collector of wastes. Excessive triglycerides in the blood also act like glue, sticking red blood cells together in clumps. This reduces their ability to dispense oxygen and pick up carbon dioxide.

Again considering our American diet, which we have come to believe is a normal human diet, we see that we often sit down three times a day and put high-fat, triglyceride-forming foods into our digestive systems. We do this so frequently that our body never has a chance to lower the high blood-triglyceride level. Consequently, over a period of years, oxygen starvation begins to cause breakdowns such as cardiac irregularities, high blood pressure, stroke, or one of the other degenerative diseases.

Luckily you can fight the buildup of triglycerides two ways. Both the reduction of fat-rich foods and exercise will help bring the triglyceride level down. Generally speaking, high-calorie concentrated carbohydrates, such as sugars, honey, and alcohol, and high-calorie fats, like butter, margarine, salad dressing, and oils, all raise your triglycerides and their consumption should be reduced. Good aerobic exercise, like brisk walking, running, bike riding, tennis, handball and similar sports, helps burn up triglycerides. Remember, for exercise to be effective it must make your body work above its normal level—you have to sweat, increase your heart rate, and breathe harder.

So that's why we're taking a little extra blood, Ben. We want to help you, and all MAC aviators, be healthier, live longer, and keep flying. You can help yourself a lot by practicing some preventive medicine on your own. Pay attention to what you eat. Try to cut down on the amount of simple sugars and fats that you poke into your digestive system, and raise your fruit and vegetable consumption. Also, get some good exercise on a regular basis to help burn up fats and calories and keep yourself in shape for the stresses of life in general and aviating in particular.

Fly healthy,

Doc

Straight Talk

by George R. Jansen
Director of Flight Operations
Douglas Aircraft Company

TO: HQ MAC/IGFE

The article "Straight Talk" in the August 1980 issue of *DC Flight Approach* is the best article on aircrew professionalism I have seen in years. It reflects a philosophy that I feel should be welded into the mind of every MAC crewmember. You should publish it in *The MAC Flyer*.

Charles T. Wood, Lt Col, USAF
Chief, Current Operations Division
375 AAW, Scott AFB, IL

★ *Thanks, for recommending the article, Colonel Wood, it is super and we're glad to reprint it here for MAC's flyers. The author, Mr. George R. Jansen, is the Director of Flight Operations for Douglas Aircraft Company. A veteran WW II bomber pilot, Mr. Jansen joined Douglas in 1945 as an engineering test pilot. He is a graduate of the USAF Test Pilot School, and has flown over 9,000 hours, most of it as an engineering test pilot. Mr. Jansen was the first person to pilot many Douglas transports, including the DC-9 and DC-10.*

As you know, 1979 was a tough year for us [at the Douglas Aircraft Company]. Since then we have taken a hard look at what's going on in our world from all angles (design, production, operation), including the human aspect and its relationship with, and effect on, aviation.

A careful review and analysis has been made of jet-age accidents and their causes. Among other things, this review shows that the percentage of pilot-related accidents and incidents is on the increase. We think we have a responsibility to ask why, and to find out what can be done about it. Some *straight talk* is in order.

For years we have talked about complacency in the cockpit. This review leads me to believe that we are now complacent about complacency. The problem, in my opinion, is more clearly defined as a lack of awareness, discipline and judgment. I know what you are thinking: "Not me—this doesn't apply to me." But I also know that when I review my own past flights, I realize I have not always performed in the best professional manner.

In recent discussions on this subject with industry leaders, it was agreed that crew discipline is a concern, but some claimed that little could be done about it. I do not believe that—we can do a great deal and we owe it to the public, our industry and ourselves as professionals to make the effort.

We have come a long way technically, but in terms of human behavior, we seem to repeat the same old mistakes. In this article we will review some critical situations in which a lack of crew awareness and discipline played a dominant role. We do this to provoke serious thought among our colleagues, to probe the probable causes of human error, to attempt to understand why we fail when we do, and to take steps to prevent reoccurrence.

We do not intentionally fly into trouble; it seems to sneak up on us, particularly when our attention wanders or is diverted.

Aircraft Accidents Trends

The world jet transport accident rate has significantly decreased over the past 15 years while the flight-crew-caused accident rate has remained approximately constant or slightly increased. A review of world accident data shows the flight crew to be a causal factor consistently in more than 60 percent of the total jet transport accidents.

Standard Operating Procedures

Almost everyone agrees that consistent adherence to standard operating procedures (SOPs) is necessary to run a tight ship. But evidently not everyone agrees that all SOPs are good or that they always apply. In fact, it is often the grey beards who are prone to question with a degree of antagonism why something must be done *that* way and not *my* way. In some cases, questions can lead to improvements; in others, they may simply express individual assertiveness.

There are usually several ways to do a job, and consistent execution of an acceptable method is always better than slipshod execution of the best method. As crewmembers, our responsibility is to follow standard procedures conscientiously and consistently unless there is a valid operational reason to deviate, or to take appropriate steps to change and improve them. Doing things the same way day after day develops proficiency and makes us feel comfortable and confident. Conversely, when we deviate we feel uncomfortable, and that sets off a built-in warning signal.

Adherence to SOPs improves cockpit communication and crew coordination. We spend a good deal of time in the close confines of a cockpit with passing acquaintances who have different backgrounds, experience levels and speech habits. Adherence to SOPs insures that we can work effectively together, understand each other and back up one another in unusual or adverse situations. Adherence to SOPs means discipline—individual effort to read and apply the book to ourselves, and when necessary, to others.

But strict acherence to SOPs is not the whole answer. In fact, mindless routine can lead to boredom, a false sense of security and a tendency toward complacency.

Data shows that nearly three out of four serious jet accidents occur during takeoff, approach or landing. In the last few years, there has been a rash of bent airplanes which landed short, or went off the far end of the runway following an aborted takeoff or a long landing. In most cases, the pilots were highly experienced, yet they often violated basic flying axioms at critical times—oversights which went undetected or unannounced by others in the cockpit.

Could it be that we have been lulled into a rut—that we have lost that keen sense of danger which has been the watchword of our profession? Have we abandoned a healthy sense of distrust because modern technology has produced a highly reliable airplane that has redundant systems, a reduced crew workload, and a comfortable cockpit environment? Has the systems approach to training and learning of standardized crew procedures allowed us to assume that we know all we need to know without further question? Are we, as professional aviators, mentally prepared to fly each flight, or do we sometimes go along for the ride and rely too heavily on our automatic systems?

Crew Briefings

Consider the takeoff briefing. It is a routine departure and our takeoff briefing consists of, "Standard procedures." Psychologically this phrase has little benefit, and possibly a negative effect, because it carries a relaxing, routine kind of message. It does nothing to get you mentally alert for an emergency and it's unlikely to trigger a mental review of the rejected-takeoff procedure. Probably the last time you actually exercised the brain to review that procedure was just before or during your last checkride. Yet, if the unexpected actually happens, the recognition, decision and execution of the abort maneuver just prior to refusal speed can become the most critical task a pilot must perform.

At the other extreme, the pilot who tediously intones a long list of "who does what to whom" in a monotonous manner makes everyone yawn.

Between the extremes is the AC who sets the tone by attitude and example, beginning with thoughtful and thorough flight planning. By maintaining high personal standards he can effectively lead the crew into a state of mental alertness and awareness.

A briefing to coordinate the crew for landing and a potential missed approach is also vital to safety. It should include a review of notams and approach and landing procedures at the destination—all very standard actions expected of a professional, and yet the accident files contain abundant evidence of failure to perform these routine functions. An airliner lands at the wrong airport and blows all the tires or lands short and ends up in flames. In the majority of such accidents, the crews were well qualified and pronounced competent each six months by professional check airmen. But when the evidence is carefully sifted, notams were disregarded, ATC clearances violated, landing briefings omitted and SOPs such as altitude callouts were deleted. The moment of truth suddenly appears after sneaking below MDA or DH and finding out the runway is not where it is supposed to be. We need to ask ourselves: How does a qualified,

When an accident investigation finds the probable cause was human error, there may be even greater resistance to deeper probes.

professional crew get into such situations?

Crew Awareness

We do not intentionally fly into trouble; it seems to sneak up on us, particularly when our attention wanders or is diverted. In a recent incident, an aircraft climbing to cruse altitude with autopilot engaged was unintentionally flown into a high-altitude stall. The crew was unaware of the actual autopilot mode (vertical-speed instead of IAS hold) and the gradually decaying airspeed. The severity of the stall was compounded because initial stall buffet was erroneously interpreted as engine vibration. Recognition and recovery were completed after an abrupt and substantial loss of altitude.

In another accident, the final diagnosis was as follows: "The National Transportation Safety Board determines that the probable cause of this accident was the flight crew's unprofessionally conducted nonprecision instrument approach, in that the captain and the crew failed to monitor the descent rate and altitude and the first officer failed to provide the captain with required altitude and approach performance callouts. The crew failed to check and utilize all instruments available for altitude awareness, turned off the ground proximity warning system and failed to configure the aircraft properly and in a timely manner for the approach."

We are often quick to pass judgment on the victims of such dramatic examples. Obviously, when problems arise in flight, someone should mind the store and fly the airplane. We can also pick over these and similar accidents and come up with contributing factors such as difficult-to-read instruments, misleading passive systems failures and nuisances such as confusing warning lights or sounds. With continued advances in human factors engineering, the trend toward safer cockpits will continue. In the meantime, we need to live with what we have through constant vigilance.

The complex, technologically marvelous machines of the day are still flown by humans. We design redundant airplane systems to reduce the effect of potential equipment failures, but the ultimate safety factor is integration of flight crew activities which can give us protection from the inevitable human failures through human redundancy and effective crew coordination.

Crew Discipline

The words "discipline" and "authority" may give rise to negative thoughts because they suggest enforced obedience. On the positive side, discipline can be viewed as training that corrects, molds or perfects the mental and physical faculties or moral character. In short, it is controlled behavior. We expect precise, smooth, predictable control characteristics in the airplanes we fly. As airmen, should we expect any less of ourselves?

While most of us have taken these matters to heart, a need for improvement in this area of human behavior is indicated by the causes of recent accidents. Too often, the "dual standard" is in operation—crews operate by the book during a check ride and then slip into a more relaxed level of performance the rest of the time. Or the AC is above comment or criticism from other crewmembers concerning his performance. In one example, during an instrument approach to a beachside airport, the first officer alerted the captain that they were not more than 20 feet off the water. His warning ignored, the first officer obediently sat quietly beside his captain as they slammed into a beach house.

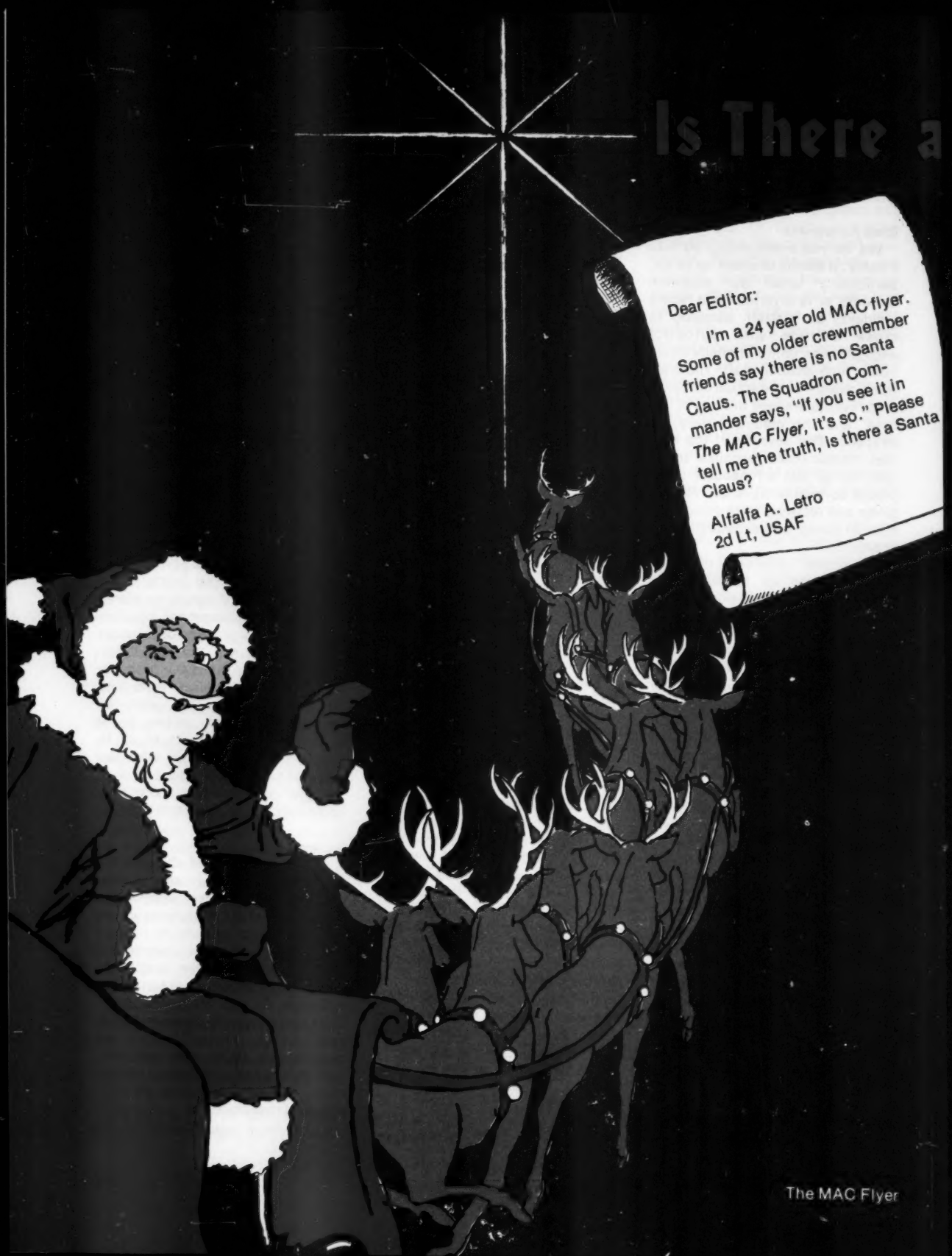
Such experiences are not confined to civilian flying. Aircraft mishaps in the Air Force increased in 1979 to a higher rate than in any previous year since 1962. A message from the USAF Chief of Staff noted that, "The most significant mishap cause factors continue to focus in the operations area as opposed to logistics. Discipline breakdowns and failure to follow established procedures indicate inadequate supervisory emphasis and lack of acceptance of responsibility on the part of supervisors and individual aircrews."

Accident Investigation

The entire aviation industry is vitally concerned with accident prevention as the stakes grow larger in terms of lives, property, lawsuits and adverse publicity. The primary purpose of accident investigation is to discover the cause, so that action may be taken to prevent a recurrence. In today's environment, however, even the initial fact-finding may be influenced by vested interests, the government, politics, threats of legal action, union protectionism and the like. When an investigation finds the probable cause was human error, there may be an even greater wall of resistance to deeper probes. But it is in the best interests of all to know and understand why experienced and qualified crews were "caught" by their errors before they could take action to correct them.

Summary

We have addressed this subject in the belief that if we can stimulate discussion it will be worthwhile. Regardless of the equipment we are flying, an improvement in cockpit discipline can help to reverse the trend of recent accident statistics. In the words of Jack Jackson of the American Airlines Flight Academy, "Our objective is to fly from A to B and never crash." We, as professional flight crewmembers, individually and collectively, are the ones who can contribute most to attaining this objective.


Is There a
Dear Editor:
I'm a 24 year old MAC flyer. Some of my older crewmember friends say there is no Santa Claus. The Squadron Commander says, "If you see it in The MAC Flyer, it's so." Please tell me the truth, is there a Santa Claus?
Alfalfa A. Letro
2d Lt, USAF
The MAC Flyer

Santa Claus?

Dear Alfy,

Your older aviator friends are wrong. They have been affected by the cynicism of a skeptical post-war age. They do not believe in anything except what they can see. They think that nothing can exist which is not comprehensible by their little minds. All minds, Alfy, whether they be men's, or women's, or second lieutenant's, are little when measured against the intelligence capable of grasping the whole of truth and knowledge.

Yes, Alfy, there is a Santa Claus. He exists as certainly as Air Force Regulations, squadron schedulers and 0300 show times exist, and you *know* they abound and give your life its highest beauty and joy. Yes, he exists as certainly as do simulator refresher courses, ORIs and augmented crew-duty days. He is as real as your leave and earnings statement, a service-wide pay raise or checkrides passed even though they happened on a "bad day." He is as wonderfully real as that successful ILS flown all the way to minimums or that landing gear that finally indicated down and locked after the third try. He is as marvelously material as the INS that keeps you from getting violated on the NAT tracks, or the navigator who used to.

Alas! Alfy, how dreary would be the world if there were no Santa Claus! It would be as dreary as if there were no day VMC, no per diem, no cancelled missions on holidays or no second lieutenants. There would be no child-like faith then, no leave, no promotions, no winter-time RONs in Florida, or positive radar control to make tolerable this existance. We should have no enjoyment, except in additional duties, pulling alert and taking flight physicals. The eternal delight with which flight fills our world would be extinguished.

Not believe in Santa Claus! You might as well not believe in the flight schedule. You might get your commander to order all north-bound missions to tune up their radars to try and spot Santa Claus, but even if they didn't see the Jolly Old Elf streaking along the great Arctic Circle route at Mach .77 on Christmas Eve, what would that prove? Nobody, not even the CINC, sees Santa Claus, but is that a sign there is no Santa Claus? Some of the most real things in the world are those that neither second lieutenants nor others can see. Did you ever see "the regular crew chief" or get a glimpse of "the big picture"? Of course not, but that's no proof they don't exist. Nobody can conceive or imagine all the wonders there are unseen and perhaps even unseeable in the world.

You can probe a thunderstorm with your radar in iso-echo to see where the heaviest returns are, but there is a veil covering the unseen world which not even the strongest radar, nor even the combined intuition of the entire Air Weather Service can lift. Only renewed devotion to things like Dash One procedures, 55-series regs, FLIP instructions, and performance charts can push aside that curtain and allow us to view the picture of supernal beauty and glory beyond the overcast. That's what it's all about, Alfy. In all this Western World there is nothing else so real and abiding.

No Santa Claus! Thank God he lives, and he lives forever! A thousand years from now, Alfy, nay, ten times ten-thousand years from now he will continue to make glad the hearts of aviators who fly safely from Christmas to Christmas.

With apologies to Francis Pharcellas Church

NATIONAL TRANSPORTATION SAFETY BOARD
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594
AIRCRAFT ACCIDENT REPORT
NTSB-AAR-80
UNITED STATES GOVERNMENT

Here's the story of an accident that hasn't happened—yet.

Probable Cause

by A. L. Harris
Central Air Safety Chairman

It's late at night. The trip is running a little behind schedule. A commercial airliner is being vectored from the west directly to the airport. It has been cleared to maintain 6,000 feet, is indicating 250 knots, and has been advised to expect a visual approach to runway 18. "Report the airport in sight, you're number one to land."

The weather is 8,000 overcast, visibility four miles with light rain and fog. The wind is light and variable. The crew sees the rotating beacon and reports the field in sight. But they can't spot the runway edge lights because they are the directional type that can't be seen until the aircraft is within about 12 degrees of the runway center line. The flight is cleared for the visual, turns downwind and begins descent.

Question: Why is the aircraft still at 6,000 feet while turning downwind when traffic is no factor?

The reason: FAA's use of the "Keep 'em high" policy as a noise abatement procedure.

Why is the flight still indicating 250 knots?

The trip is running late, and besides, ATC has not requested a specific airspeed.

This flight crew consistently rates as above average on proficiency checks, uses checklists religiously, makes altitude callouts and is very enthusiastic about conserving fuel—uses the recommended fueling codes and consistently strives to "beat" the computer flight plan burnoff. In every way, they run a "good" trip.

The flight turns onto final about two miles from the end of the runway. Rate of descent, a little more than 2,000 feet per minute.

Now come the hurry-up errors of omission. They:

* Neglect to tune in the ILS because it's a visual approach.
* Turn off the GPWS because they know they have a high sink rate so why have the thing yell "pull-up."
* Fail to reduce speed to bug-plus because a little extra will help with the flare. No problem with hydroplaning—the runway is only reported *wet*.

The crew barely feels the airplane touch down—a little long and about 15 knots fast. No problem, plenty of runway left. Then to their great astonishment, when the binders are applied there is zero braking action. Why? Rubber reversion of the tires.

The airplane sails majestically off the end of the runway with its engines banging away due to compressor stall in reverse at a ground speed of only about 15 knots.

Luckily, no injuries and no major damage to the airplane result. No big deal. Just one of those things that sometimes happens. Right? Wrong!

The official probable cause reads, "the flight crew failed to adhere to prescribed approach and landing procedures."

But why? It was a visual approach.

First, excessive sink rate on approach. Second, excessive airspeed over the threshold of the runway and third, landing beyond the touch-down zone.

Now begins the long, frustrating, exasperating, traumatic and expensive process leading to at least a charge of careless or reckless operation and possibly a blemished flying career.

What was the "real" probable cause? Was it the use of the "keep 'em high" policy as a noise abatement procedure? Was it ATC's use of visual approaches in fairly marginal weather conditions? Was it the flight crew's enthusiasm to save fuel? Was it the crew's efforts to try to get the trip back on schedule?

And what was the *real* price of the few hundred pounds of fuel it might have cost to refuse the visual approach and make a proper ILS approach?

You be the judge. And remember, this particular incident hasn't happened yet.

—Adapted from *Flight Lines*

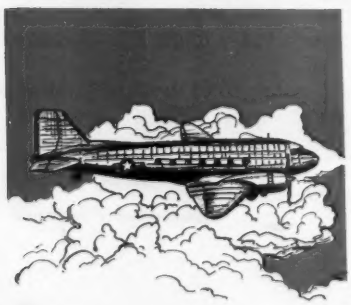
Fascinating reading for aviation buffs.

BOOK REVIEWS

by Major James G. Gibson II
Supervising Editor

Flying The Old Planes
by Frank G. Tallman

If you've ever wondered what it would feel like to slip the surly bonds on the delicate stick and fabric wings of an ancient Bleriot monoplane or Wright biplane, or pull high performance maneuvers in a WW II fighter such as an F-4U "Corsair" or a P-51 "Mustang," then this is a book you will relish. Tallman, who was one of the world's greatest aviation stunt men until his untimely death (see *TMF*, Sep 1978) put together a sizeable museum collection of historical airplanes. All were authentically restored and maintained in flyable condition, and in this profusely illustrated book Tallman shows each one, explains how it handles, and relates lots of other detailed, first-hand information of interest to flyers and aviation buffs alike. It's the kind of book you'll probably want to add to your *personal* library eventually.



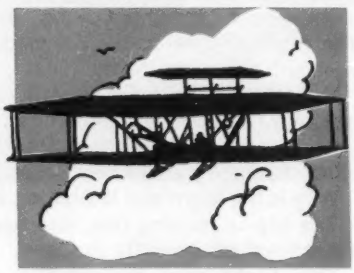
Sole Survivor
by George H. Gay

Here, told by the man who lived it, is the intriguing story of a young Navy torpedo plane pilot who gained a substantial amount of notoriety during WWII because he was the only flyer from his unit (Torpedo Squadron Eight) to survive the Battle of Midway.

After taking off from the carrier *USS Hornet* along with a number of other attack aircraft units, VT-8 stumbled onto the Japanese fleet before the rest arrived. As a result, its badly outnumbered planes were hammered by the full force of the flotilla's antiaircraft guns and Zero defenders. Ensign Gay's TBD-1 "Devastator" was eventually shot down, and he spent the next 30 hours in the ocean while the battle continued to rage all around him. His very personal and candid account of his unique sea survival episode, the events which led up to it, his experiences during the rest of the war and later on as a commercial airline pilot is chock-full of colorful adventures and anecdotes. It keeps you turning the pages to find out what kind of predicament Gay will find himself in next.

The Road to Kitty Hawk
by Valerie Moolman

One of mankind's oldest and most compelling dreams has been the desire to fly. In this book, the third volume in Time-Life's "Epic of Flight" series, a number of bizarre and often tragic schemes and devices by which men down through the ages attempted to hoist themselves aloft are chronicled. An array of excellent illustrations and captivating historic photographs complement dozens of colorful anecdotes. From ancient kite flyers in China to Wright Flyers on the Sands of Kitty Hawk, the technological journey which culminated in successful powered flight is retraced. You'll meet many members of the unique brotherhood of theologians, artists, scientists and statesmen—some genuinely clever, others totally inept—who shared in the process of making man's dream of imitating the birds come true.



The Spirit Of St. Louis
by Charles A. Lindberg

This is the author's personal account of the painstaking preparation and execution of his famous solo flight across the Atlantic in 1927. An aviation classic, it's written with a pilot's eye for details—such specifics as performance and handling data on Lindbergh's unique Ryan monoplane, and how he carefully planned the 3,600 mile journey from New York to Paris in 100-mile, hour-by-hour increments on his navigation chart. With minimal effort, you can vicariously join "The Lone Eagle" during his intimate, intriguing

account of each of the flight's 33½ hours as he battles a combination of the hostile elements of nature, a demanding and sometimes seemingly perverse little airplane, and the constant deadly courtship of Morpheus. You'll pause before complaining about long crew duty days after reading this inspiring and engrossing epic.

By The Seat Of My Pants
by Dean C. Smith

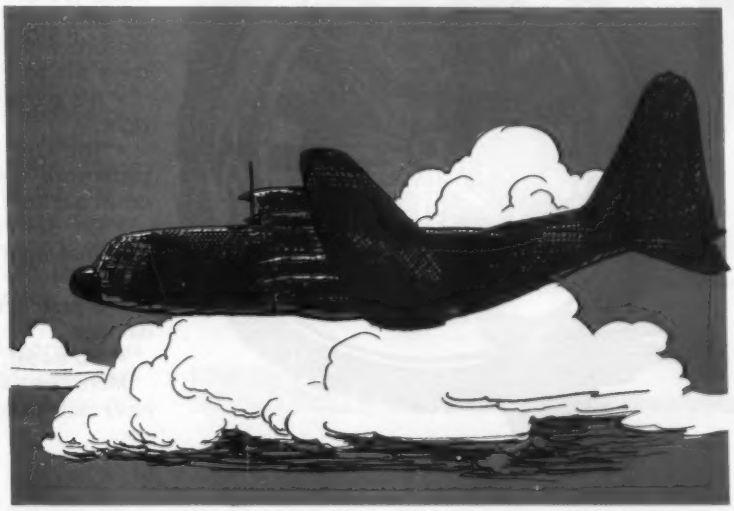
Subtitled, "A Pilot's Progress From 1917 to 1930," Mr. Smith's book is a thoroughly engrossing, personal account of his varied and sometimes breathtaking exploits during the pioneering days of aviation. After getting off to an abortive start in the Army by cooking up bogus orders sending himself to flying school—and getting caught—Smith survived and prospered through a combination of natural ability and intelligence coupled with nerve and good fortune. Despite his shaky beginning, "D.C." went on to earn a commission and win his wings, became a daredevil for a while after WW I, flew the Air Mail in DH-4 biplanes, and was one of the pilots on Admiral Byrd's world-famous 1928-29 South Pole expedition. The characters he met along the way and the adventures he had make mighty interesting, nostalgic and enjoyable reading. I hated to see Smith sign off after what seemed like a very quick 245-page odyssey.

The Long Arm Of America
by Martin Caidin

If you're tired of reading negative news about the military and would like to see it, and tactical airlift in particular, get over 350 pages of positive strokes, then this is your kind of book. Caidin, an aviation author of considerable repute, cranked out this salute to the C-130 back in the 1960's, and seems to have been absolutely dazzled by Herky Birds and everything connected with them. There are plenty of interesting "inside" technical tidbits on the development and testing of the medium-range turboprop "trash hauler," and hundreds of spicy and colorful anecdotes covering its exploits around the world in combat, humanitarian airlift and a variety of other missions. At some points in the narrative you may begin to wonder if the author was a "flack" for Lockheed, but if you stick with him you can't help sharing the enthusiasm he developed for the C-130s and their crews as he learned through exhaustive research and first-hand experience what amazing airlift feats they could accomplish.

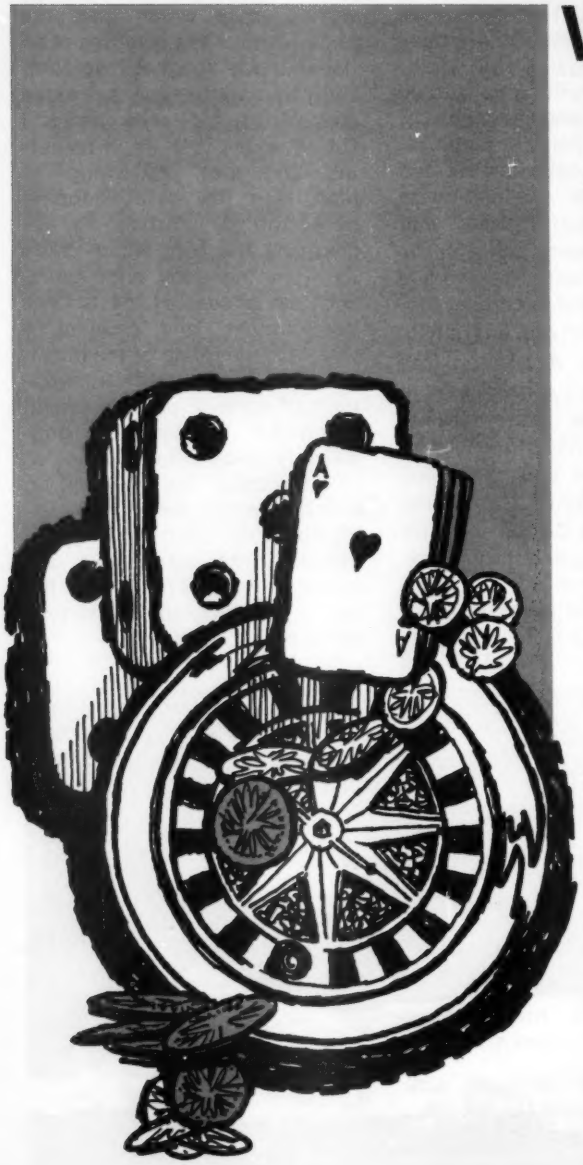
Herk: Hero of the Skys
by Joseph Earl Dabney

Although Joe Dabney modestly defers to Caidin's volume on the C-130 as "the definitive early history of the Hercules," he doesn't need to take a back seat to anybody with his portrait of the Herk. While Caidin used a "biff-bang" writing style which gave his book some of the qualities of an Italian-made spaghetti western, Dabney employs a more straight-forward style which I found every bit as interesting—and less distracting—to read. *Herk* has an outstanding selection of photos to accompany the text, which takes us from the early engineering and test phases of the C-130's development, and provides a varigated sampling of the jobs it has done in the airlift organizations of some 45 nations around the globe. Included is a gripping, blow-by-blow account of "Thunderball," the 1976 raid on Entebbe, and a fascinating collection of short, "Quick Stopper"-type accounts of adventures. *Herk* is my pick of the two C-130 "biographies" reviewed here.



When the Chips Are Down . . .

For helicopter flyers, it's put it down and leave it down.



While on approach to a runway about a mile and a half away, an Army CH-47 pilot saw the transmission chip-detector light flicker. Rather than continue the approach, he immediately made a precautionary landing. As the helicopter touched down, the transmission exploded and the aircraft caught fire, causing major damage. But there's a bright side to this incident. At the time of the emergency, six persons were on board the aircraft. If the aircraft commander had ignored the warning light and continued his approach, all six people could easily have been killed.

Any aviator who flies long enough sooner or later is going to have the opportunity to demonstrate, when the "chips are down," whether or not his training and flying hours have been well spent. A helicopter is a mass of push-pull rods, chains, gearboxes, linkages, servos, and other items which generally work together smoothly; but occasionally they hang up, and once in a while go "snap, crackle and pop." When this happens, the pilot must have the good sense to put the aircraft down at once—and leave it down.

Accidents are likely to occur when crews don't make precautionary landings when they should, so why don't they? Let's look at a few of the reasons which have been given—perhaps some of them will sound familiar.

- "It's probably just fuzz on the plug. It'll be all right."
- "The Old Man doesn't like to fill out all the paperwork that's required if we put the aircraft down out here."
- "Oh, don't get upset. I can handle it!"
- "That light comes on all the time; just ignore it."
- "I just brushed that tree. There's no real damage."
- "No sweat, we can make it."

More like excuses than reasons, such alibis can have catastrophic consequences.

A UH-1 pilot entered autorotation when the engine rpm dropped to 5,200, but it quickly increased so the pilot made a power-on approach to the ground. Once securely on terra firma, and since the engine was still running, he decided he could make it one more mile to an airfield. Complete engine failure occurred enroute and the aircraft crashed. He never made it that last mile.

In another case, an OH-6 was not developing full power, so the pilot landed to see what was wrong. He made a hover check and decided the engine was performing more-or-less normally. Instead of having maintenance inspect the helicopter, he tried to continue his flight. The engine failed at 100 feet during take off, the helicopter crashed and all on board were killed.

Another OH-6 pilot radioed that he was having trouble controlling excessive engine rpm. The problem continued for ten minutes and the last transmission received was, "I think I just lost everything." Witnesses said they heard what sounded like the engine and rotor revving up, followed by relative silence. The main rotor had flexed down, severing the tail boom, and the aircraft fell from about 1,500 feet. The helicopter was destroyed and the pilot killed. He had failed to land even after numerous indications of a malfunction.

Ten minutes after takeoff, another helicopter pilot reported his engine chip-detector light was on and he was returning to home base. His last radio transmission indicated that the turbine temperature was "out of sight," that the aircraft was vibrating severely, and he intended to land at the closest helipad. A witness stated that he saw flames coming from the rear of the helicopter, followed quickly by apparent engine failure. The aircraft hit a 60-foot tree and sank in about eight feet of water. All three occupants were killed.

It's difficult to say what prompted these aviators to continue trying to fly rather than land, but certainly the reasons given earlier could never justify decisions which jeopardized—and in some cases cost them—their own lives and those of their passengers plus the destruction of the aircraft.

No amount of knowledge or experience makes one aviator any more qualified than any other flyer when it comes to attempting to fly an obviously malfunctioning aircraft. An "old head" is as vulnerable and just as likely to end up on the "skids," as the following account illustrates.

The helicopter AC decided his chopper was unflyable due to an increase in EGT when power was applied. Also, black smoke was seen pouring from the tailpipe, oil vents, and particle separator. The unit maintenance officer (also a highly experienced pilot) made a 15-minute runup with the same indications of a malfunction, but decided to fly the aircraft to the maintenance area anyway. As he lifted off in a near-maximum-performance takeoff, into a tailwind, the engine failed. The aircraft rolled on its side and slid 280 feet down a railroad track, resulting in major damage to the airframe. A decision to tow or slingload the aircraft to the maintenance area could have easily prevented this needless mishap.

Regardless of any excuse, whether it be pride, excessive self-motivation, or mild coercion by peers or even supervisory personnel to accomplish the mission, it's always safer to put the helicopter down—and leave it down—at the first sign of trouble.

–Adapted from U. S. Army *FlightFax*

Our Somnambulistic Skipper sojourns to the early days of all-weather aviation.

The sleek gray and white Starlifter cruised along smoothly at FL 390, outracing the contrails continuously materializing behind its four turbofan engines in the 60-degrees-below-zero atmosphere. Inside the 141's cozy cockpit, tilted back comfortably in his adjustable pilot's seat and resting his custom made flight boots on the instrument panel stirrups, MAC's most malcontented major was in the mood to bend his copilot's ear with one of his pet discourses.

"Y'know what, Sammy?" he began, "They've taken all the romance and adventure—the fun, if you will—out of flying."

"Why do you say that, Boss?" countered the curious copilot.

"Because everything is now computerized, mechanized, sanitized and prioritized, and you've always got somebody looking over your shoulder no matter where you are in the system. They're always full of *guidance* on how you should fly your mission, how you should handle emergencies, or—"

"Stand by one, Boss, I'm getting some 'guidance' right now from the 21st Command Post about a possible diversion into Wright-Patt before we terminate at McGuire."

"That's just exactly the kind of thing I was referring to," the Superceded Skipper carped to himself. "Here we were just about to make it home tonight in time for the squadron Christmas blowout — which I was in charge of planning and making all the arrangements for. With a diversion, we probably won't get back 'til tomorrow at the earliest. What I'd give for the good old days when you strapped a biplane to your buns and bored holes in the clouds at your own discretion. Just imagine, no hassles—grab the mail sacks, kick the Goodyears, shout 'contact' and away you go. Free as an eagle, scarf fluttering in the slipstream . . ."

The warming effect of the western sun beating in through the windscreen did its work quickly, and the Sultan of the Stratocu was suddenly transported in his dreams to those

bygone days of yesteryear when flying was done on a wing and a prayer. C.R. "awakened" to find himself stuffed into the cockpit of a DH-4 biplane, where he had apparently spent the night sleeping fitfully. Cold and stiff, he stretched, climbed out of the plane and surveyed his surroundings, which consisted of a delapidated wooden hangar, a small shack next to it, and the cleared patches of ground which served as ramp and runway that were surrounded by a veritable wall of dead corn stalks. The Frosty Flyboy slapped his fur mits against his arms and sides in an attempt to pound away some of the December chill and walked stiffly over to the shack, where smoke coming from a battered stovepipe indicated there might be some life. Under a faded sign proclaiming the small building as the office, he opened the door a bit, poked his head inside tentatively and shouted, "Anybody home?"

"Howdy, come on in," said a voice from behind a makeshift counter that bisected the inside of the shack. "Scuse me, I'm givin' m'cats some milk," the voice continued, "Be with yuh in a minute."

"No rush," insisted the Agreeable Aeronaut. "I'll just warm myself by the stove here," and he bellied up to the potbellied woodburner glowing invitingly in a corner.

"Well, now, what can I do for yuh, stranger?" The voice actually had an owner attached and it eminated from a grizzled head with a slouch cap jauntily perched on top of it with the bill pointing backward. A greasy pair of bib overalls covered the gangly framed individual of undistinguishable age. "'Magneto' Macigfee at your service," he offered, extending a grimy paw.

"Terror's the name, airmail's my game," responded C. R. casually. "Where can a fellow get some breakfast around here? I spent most of the night camped in the de Havilland Hotel out there and I'm starved."

Scratching at his thatch of brown hair aggressively, Magneto pondered for a moment. "Guess yuh could ride into town with Leroy Singletree after he brings out this morning's mail. Don't know how you'd get back here, though."

"If that's the case," assessed the Pudgy Pilot, "I obviously haven't got time to go to town. Isn't there a snack bar someplace close by?"

"What's a snack bar?" puzzled the mystified mechanic.

"Never mind, Macigfee, you wouldn't understand," said C.R. impatiently. "How about just letting me have a cuppa coffee?"

"Shore thing, lemme see if she's ready," answered Magneto as he came around the counter, went over to the stove and took the lid off the dented old coffee pot. Picking up an iron nut that looked large enough to fit on a railroad track joiner-plate bolt, he plopped it into the dark, bubbling substance inside the speckled pot. When the nut slowly resurfaced, he plucked it out with a pair of tongs, set it aside, and announced, "Yup, she's just about fit fur drinkin' now."

Carefully nursing a tin cup full of the powerful seething brew between his hands like a hot potato, the Solo Skipper took a loud sip, tried not to wince as it rolled down his gullet like molten lava, and finally managed to croak, "Now that's real coffee! By the way," he added, "I haven't been over this route to St. Louis before—where can I do some flight planning?"

"What d'yuh need for that?" asked the rustic air patch proprietor.

"Charts, maps, weather briefing—that sort of stuff," replied C.R.

"Oh, sure, fix yuh right up," said Magneto brightly as he bobbed down behind the counter and resurfaced with a dog-eared, coffee-stained National Geographic map of the world. "As far as the weather," he offered sagely, "Look outside—what yuh see is what yuh got!"

C.R. took one look at the map, the scale of which condensed the entire United States to about three inches from coast to coast, and then pushed it back toward Macigfee with a lackluster, "Thanks." Deciding he had pretty well exhausted the crew rest and flight planning possibilities of his host, the Peripatitic Pilot figured it was time to press on. "By the way," he remembered half way out the door, "I need to top off my fuel."

"Pump's inside the hangar door and there should be a bucket next to it. Just tell me how many gallons you used when you finish," were the instructions which wafted up from behind the counter where Magneto had settled back in a squeaky swivel chair with his brogans propped on a cluttered rolltop desk.

It took the self-serving gas "gopher" six trips with the two-gallon bucket to replenish his tank—and that included the half-bucketful he splashed on the ground and himself when he tripped in a wheel rut and lurched to regain his balance. Macigfee met him at the door of the shack when he came back to

settle up. "Yuh better not come in where the fire is the way you smell, mister," he warned C.R. with a superior, knowing sort of smile.

"Thanks for your hospitality and concern," the Paunchus Pilot returned as icily as he dared without being overly hostile. The satisfaction of insulting the pernicious proprietor, he judged, wasn't worth antagonizing himself out of a potential prop-puller to help him get his Liberty engine going.

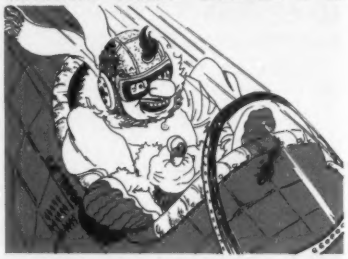
"Shall I give yuh a hand with the prop?" volunteered Macigfee finally, when it appeared C.R. wasn't going to leave unless he offered. On the way over to the biplane, the Masterful Manipulator of Wires and Tires tested the wind with a wet pinkie, looked at the tattered windsock and commented, "That sock and the breeze don't seem to be very much in agreement."

"Shucks," replied the haphazard hayseed offhandedly, "that old dingus has been stuck in that direction ever since I can remember. Nobody pays it no mind nohow."

With Macigfee's directions for St. Louis still ringing in his mind—"Just head thataway and follow the B&O railroad tracks; yuh can't miss 'er!"—C.R. warmed up the Liberty until its 400 horses were all galloping pretty much in the same direction, taxied out to the rutted swatch of terra bumpa that served as a runway and bounced off into the blue.

For the first couple of hours, it looked like the trip was going to be a piece of cake as the DH-4 throbbed along in the clear, cold skies 1,500 feet above the B&O right of way. Soon after he crossed the Wabash River and headed into Illinois, however, it became a different situation when the Balding Eagle ran smack dab into a slow-moving cold front. "Like I always say," he muttered to himself philosophically, "Weather is where you find it—or it finds you. Oh, well, I'll just climb a little bit and get on top of those clouds up ahead."

Climb as he might, it soon became evident that the biplane was not going to surmount the accumulating cumulus, and the Ace of Aerospace suddenly found himself enveloped in a world of white. "I'll just push on and be out of this stuff in no time," he tried to reassure himself while he wiggled his rotund rump around in the aircraft's wicker seat as if to



somehow sensitize his posterior for the task of flying by the seat of his pants. He ginned along feeling quite smug for a few minutes because everything felt normal and he was confident the wings were straight and level. Before he had a chance to revel in his prowess at blind flying, however, the plane gave a couple of bucks and began to plummet earthward.

In his opaque world, with neither visual references nor attitude instruments, the Frustrated Flyboy's only half-way accurate sense of direction, attitude or motion was provided by an increase in the pitch of the wind in the wing wires as he gained downward momentum. Everything else was a jumble of conflicting messages between his inner ears and his rump. "Oh, no, I'm too young to die," he moaned helplessly as the realization that he was in a spiral dive hit him fully. He grappled with the controls mightily, but nothing seemed to work.

"Hey, Boss, wake up, wake up!" It was Sam shaking his shoulder and saying, "Boy, that must have been some dream the way you were struggling around in your seat. You even flailed around and disengaged the autopilot. For a second or two I though the aircraft was gonna do a spiral dive."

"It did, it did," screached the half-awake honcho before completely regaining his senses and composure.

"No, Boss, I caught it in time," reassured the competent copilot.

"Yes, so you did. Good work, Sammy," congratulated the now fully awake Terror, knuckling the last sleepiness out of his puffy eyes. By the way, what happened with our diversion while I was in dreamland?"

"Command Post called back a little while ago and said they found an eastbound Travis bird to do the job. They cleared us to continue direct to McGuire and wished us Season's Greetings."

"Guess that means I'll be home for Christmas, then," smiled C.R. "Maybe those crooks at the com-post aren't so bad after all."

Crossing over Nantucket VOR, the Somnambulistic Skipper's sidekick couldn't help repopping the question about the AC's flightmare.

"Never mind about my dream, Sammy," cautioned the reformed advocate of the advantages of ages past, "but if you catch me talking about the 'good old days' anytime soon, you have my permisson to administer one swift kick to a place on my anatomy where the sun don't often shine."

QUICK STOPPERS

Mid-Shift Cowboy

The driver of a Navy tow tractor was delivering tools for maintenance already underway on an aircraft. As the tractor passed the nose of the parked plane, the driver cut sharply to the right in order to stop smartly alongside the crew door. The high-G turn, however, unseated the surprised seaman who found himself looking up from his prone position on the deck just in time to watch the driverless tractor strike the aircraft's nose strut with a loud and damaging "crunch." Although bronc-busting cowboys sometimes get thrown from horses, maintenance types should never get thrown by a tow tractor.

—USN *Weekly Summary*

Snacks Aren't Meals

The following admonitions should be given serious consideration by those crewmembers who are inclined to "grab snacks" at odd hours rather than take the time to enjoy proper food, particularly when on trips. Overeating may be a threat to health on a long-term basis, but undereating can, at times, become an immediate threat to you and the lives of your fellow crewmembers.

Your body, just like your aircraft, runs smoothly when the tank is fueled, burning about 250 calories per hour under a moderate workload and more when it's cold. Your main fuel tank lasts about 4.5 hours after a good meal, and when it begins to run dry, the reserves are called upon. Sugar is released from the liver, your body's auxiliary tank, and this reserve may last another three or four hours. If you are already operating on your reserves and an emergency arises where your body needs a sudden burst of energy, the necessary reserve may not be there. Even under normal flying conditions, the reserves can eventually be depleted and your body rebels against burning up good muscle tissue just because you have not taken time to eat. As your blood sugar level drops, your brain cells are starved and you become fatigued and irritable. Coordination diminishes, attention span shortens, and procedural sequences may be inverted or portions dropped out altogether.

The obvious solution to this flying safety hazard is, as always, prevention. To remain your alert best, give your body the fuel it needs in the form of well-balanced, regular meals.

Snow Job

While plowing snow from one of the taxiways running perpendicular to the active runway, the driver inadvertently entered the runway. A four-engine jet had already been cleared for takeoff and was accelerating down the macadam directly toward the plow. Spotting the yellow rotating beacon atop the big plow truck, the ground controller radioed the driver to clear the runway immediately, but got no response. The big jet was now traveling at about 110 knots and fast approaching rotate speed. Transmitting on tower, departure and guard frequencies, the controller ordered the aircraft to abort its takeoff. The flight crew instantly cut power and stood on the binders. As the decelerating aircraft passed the taxiway, the snow mover, still plowing up a storm, had worked his way back off the active, apparently oblivious to how close he had come to causing a disastrous accident.

"Let's Hear It for the GPWS"

The Boeing 747 airliner with 516 souls on board was holding at the VOR waiting for improved visibility at a Japanese airport. Soon, the fog abated enough to prompt the approach controller to begin vectoring the jumbo for a radar approach. Turning from a base leg to the final approach course about 20 miles north of the field, they descended from 5,200 feet to 2,000 feet and slowed to 230 knots. A further letdown to 1,500 feet was accomplished on final. At nine miles, the 747 was instructed to turn left to 090° and maintain altitude due to decreased visibility. The captain took this to mean the last assigned altitude before beginning final approach so he climbed to 2,000 feet and continued on the vector heading. Seconds later the radar altimeter suddenly decreased from 1,700 feet to 1,350 feet and the GPWS flashed momentarily and sounded a single "terrain" warning. The crew kept going. A minute-and-a-half later the GPWS again triggered, only this time with a "terrain, terrain" call followed by continuous "pull-up, pull-up" audio warnings. The crew listened to the warning for a full 15 seconds, then the captain finally initiated a steep climbing left turn, narrowly avoiding a mountain peak. The minimum sector altitude was 5,400 feet. —Flight Safety Foundation

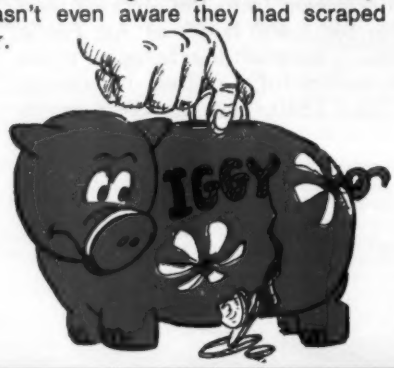
Notable Quote

When handling an inflight emergency, follow these five "Cs" in the correct order: **Control** the aircraft. **Clearance** or **climb** (get or stay clear of terrain, other aircraft, or weather). **Course** (know where you are going). Then **Call** (let somebody outside of the aircraft know about the emergency).

—U.S. Army's *Flightfax*

Don't Bank On It

Weather was 200 feet obscured with barely three-quarters-of-a-mile visibility. A chilly nighttime fog settled in around the naval air station—just the kind of soup that quickens the pulse of aviators the world over. The C-141 pilot flew a stable PAR but was advised he was slightly left of course as they approached landing minimums. Sighting the runway approach lights through the fog, the copilot called "land." The AC then banked right, overcorrecting slightly to the right side of the runway. When the controller called "decision height, slightly right of course, runway is to your left," the pilot quickly banked back to the left toward the centerline. The aircraft crossed the threshold on centerline, but was drifting right to left. To stop the drift, the left-seater again banked right and used rudder to align the nose with the runway. He maintained the right bank (approximately seven degrees) until after making a smooth touchdown. Another successful landing in spite of bad weather? Not quite. Routine post-flight inspection revealed right wingtip damage. This was corroborated by a 57-foot-long skid mark consisting of paint and small metal bits on the right edge of the runway. The crew wasn't even aware they had scraped the Starlifter.



A Movable Crane

With a 900-foot ceiling and patches of scud in the area, the medevac helicopter pilot approached the hospital very cautiously. It was night and helipad lights were not on yet, so the crew circled the hospital checking for wind direction and planning the approach path and angle. A number of unlighted construction cranes had been plotted and their position was known to the crew. The flight mech scanned out the right door to keep a look out for them.

Lining up on a pre-determined "clear" approach path, the chopper began a slow descent. At 300 feet the copilot spotted an unmarked and unlighted crane and yelled at the pilot to break right. They missed it by only 20 feet and pulled near max power in a climbing right turn. After a safe landing from a slightly different direction, the pilot surveyed this unexpected addition to the landscape and found it to be a mobile crane, 300 feet high, which had been positioned only 60 feet from the helipad. No one had bothered to notify the helicopter unit of this added obstruction hazard.

Beware the "Bug"

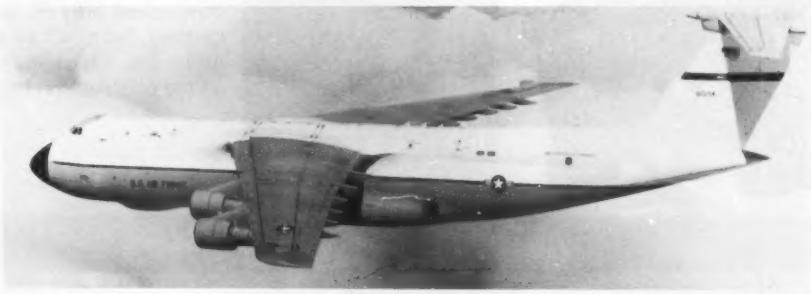
On downwind leg for a PAR the C-130 aircraft commander was monitoring the copilot's approach when suddenly he began to experience dizziness, blurred vision and nausea. The left-seater told the copilot to continue flying the airplane and was helped from his seat by the engineer and loadmaster who secured him in a crew bunk and administered 100 percent oxygen. The flight engineer then hopped in the left seat and assisted the copilot in completing the approach and landing. The flight surgeon pronounced the cause of the pilot's incapacitation as an intestinal virus. (For a discussion of pilot incapacitation and how to deal with it, see page 13 in the September issue of *TMF*.)

AFTER DEADLINES

TWO SHARP PEOPLE ARE NEEDED to fill vacancies on *The MAC Flyer* staff during 1981. Two military staffers are scheduled for reassignment, and we're seeking applicants for their jobs. Our authorized manning is one major and two captains, all rated. We will consider any officer crewmember who has a strong desire to write and edit the world's finest flying safety magazine. Recent MAC weapons system experience, credentials in written communications, and safety program background are strong qualifications. Desired PCS-in dates range from March through September 1981. If you'd like to volunteer, contact the *Flyer* at autovon 638-3534 or write HQ MAC/IGFE, Scott AFB, IL 62225.

ERRATUM: The bottom "Deja Vu" photo on page 24 of the November 1980 issue of *TMF* was inadvertently reversed left to right.

A REWINGED C-5 COMPLETED INITIAL FLIGHT EVALUATION SUCCESSFULLY. Galaxy number 0214 finished the intensive 14-flight testing program, which included nearly 55 hours of airborne time, at Lockheed-Georgia Company facilities. Specialized test equipment will be removed from the aircraft, and it will be delivered to Dover AFB, Delaware, for 1,400 hours of Air Force follow-on operational testing and evaluation. Meanwhile, fatigue trials continue on another new C-5 wing which successfully passed its design lifetime of 30,000 hours without failure in May 1980, and has gone on to exceed the 45,000-hour milestone.



The Rules

The 1981 MAC Flying Safety Writing Contest is conducted according to MACR 900-3 and the following rules. All entires must be original, unpublished, and postmarked no later than 31 March 1981. Stories must be between 1,000 and 3,000 words long (about 6 to 14 double-spaced typed pages); poetry should be about 75 to 100 lines. Entries must contain an aviation safety message. Manuscripts must be double-space typed and submitted in two copies. The article will be identified by title only, and a coversheet will be attached showing the author's name, address, phone number and unit. Also, the coversheet should contain a brief autobiography.

The contest is open to anyone, and entries qualifying under the above rules earn their author a free C.R. Terror T-shirt and a one-year subscription to *The MAC Flyer*. However, contest prizes (desk sets and plaques) may only be awarded to military and civilian employees of the DAF or Air Reserve Forces. Other entrants may be selected for Honorable Mention in a Special Category. All winning stories will be published in *The MAC Flyer*. Entries should be addressed to: Writing Contest
HQ MAC/IGFE
Scott AFB, IL 62225

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Don't let that outfit fool ya, Cranston; I've had a check ride with this guy before.